

**IN THE SPECIFICATION:**

Please amend the specification as follows:

Please replace the first full paragraph appearing on Page 3 as follows:

B1 A further concern with direct conversion transmitters is that the LO signal cannot be provided directly from a synthesiser locked VCO. There are two main reasons why. Firstly, if the radiotelephone has an internal antenna there is a very great risk that the transmitter will radiate back into the synthesiser locked VCO and cause it to go out of lock or generate spurious signals. Secondly, there will be insufficient isolation between antenna impedance (which will vary a great deal as the user moves around) and the synthesiser locked VCO. This will cause the synthesiser locked VCO to either go out of lock or generate spurious signals. One method of solving this problem is to create the LO signal by mixing together two synthesiser locked VCO signals and then filtering the LO to remove any unwanted mixing products. This however, increases component count and current consumption.

Please replace the last full paragraph appearing on Page 5 as follows:

B2 Fig. 1 is a schematic circuit diagram of a preferred embodiment in accordance with the present invention; and

Please replace the second full paragraph on Page 6 as follows:

**Detailed Description of the Invention**

B3 Referring initially to Fig. 1 there is shown an exemplary modulator circuit diagram of the present invention. In this circuit a suitable power supply is connected at V3v ie. 3 volts.

B3 The power supply V3v is connected to the output loads of the modulator circuit, the load being represented by resistors RL1 and RL2. These however may be reactive, resistive or active whichever is most suitable in the application. The output loads RL1 and RL2 are connected respectively to Pout and Nout which are the differential outputs of the modulator circuit. The signal present between Pout and Nout is the modulated radio frequency carrier. In the case of an 'I/Q' modulator this differential output would be summed with the differential output of a second modulator. The summed output would then be passed to the next stage of the transmitter.

---

Please replace the third (next to the last) full paragraph on Page 7 as follows:

---

B4 The current controller operates to hold the total current through the Q1 ,Q2 and Q3,Q4 pairs constant, if the voltage on RFP and RFN is held constant for instance, the local oscillator signal on Lo as it becomes more positive will increase the current flow in Q2 and Q3 thus reducing the current flow in Q1 and Q4. When the local oscillator signal is lower in voltage than RFP and RFN, Q2 and Q3 will have much less current flowing in them than Q1 and Q4. When the local oscillator voltage is the same as RFP, Q1 and Q2 and also Q3 and Q4 will have the same current flowing in them. When the local oscillator voltage is greater than the voltage on RFP and RFN Q2 and Q3 will have more current flowing in them than Q1 and Q4.

---

Please replace the fourth (last) full paragraph on Page 7 as follows:

B5 As shown in the embodiment of Fig. 1, the collectors of Q1 and Q3, Q2 and Q4 are connected together. Based on the description above, with RFP and RFN held at the same constant voltage, the current in Q1/Q4 will decrease at the same rate as the current in Q2/Q3 increases as the Lo voltage increases. Thus the voltage at Pout and Nout will remain constant. If the Local oscillator signal on Lo is larger in amplitude than Vbe i.e. 0.7 volts, it will completely switch Q2 and Q3 on and off. This is the desired mode of operation. The output pulses will then be of an amplitude defined solely by the amplitude of the differential signal applied between RFP and RFN and the gain defined by the current control means.

Please replace the second full paragraph on Page 8 as follows:

B6 Referring to Fig. 2, this shows the operation of the sub-harmonic mixer with an input signal of 4.1MHz with an Lo of 2Mhz. This demonstrates its mode of operation.

Please replace the first full paragraph on Page 9 as follows:

B7 Furthermore, each feature disclosed in this specification (which term includes the claims) and/or shown in the drawings may be incorporated in the invention independently of other disclosed and/or illustrated features. In this regard, the invention includes any novel features or combination of features disclosed herein either explicitly or any generalization thereof irrespective of whether or not it relates to the claimed invention or mitigates any or all of the problems addressed.